

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/33230

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8): C07K 14/00( 2006.01);A61K 38/00( 2006.01)

USPC: 530/350;514/2

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 530/350; 514/2

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Dialog (Medline, Biosis, EMBASE, SciSearch): Cyanovirin, recombin? EAST: Cyanovirin, recombin?

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Current Protocols in Molecular Biology, Chapter 16: Protein expression. Especially sections 16.0, 16.1 and 16.2 (pp 16.0.1-16.2.11). John Wiley and Sons, (c) 1998-2007.	1-2
Y	Boyd, et al. Discovery of cyanovirin-N, a novel human immunodeficiency virus-inactivating protein that binds viral surface envelope glycoprotein gp120: potential applications to microbicide development. Antimicrob Agents Chemother. 1997 Jul;41(7):1521-30.	1-28, 39-42, 64-65
X	Dey et al. Multiple antiviral activities of cyanovirin-N: blocking of human immunodeficiency virus type I gp120 interaction with CD4 and coreceptor and inhibition of diverse enveloped viruses. J Virol. 2000 May;74(10):4562-9.	1-27, 39-42
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Y	Mori, et al. Recombinant Production of Cyanovirin-N, a Potent Human Immunodeficiency Virus-Inactivating Protein Derived from a Cultured Cyanobacterium. Protein Expression and Purification Volume 12, Issue 2 , March 1998, Pages 151-158.	28, 64-65
X	Mori, et al. Recombinant Production of Cyanovirin-N, a Potent Human Immunodeficiency Virus-Inactivating Protein Derived from a Cultured Cyanobacterium. Protein Expression and Purification Volume 12, Issue 2 , March 1998, Pages 151-158.	2-16, 18-27, 39-42
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Y	---	I, 28, 64 and 65

 Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

07 February 2007 (07.02.2007)

Date of mailing of the international search report

14 MAY 2007

Name and mailing address of the ISA/US

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**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:  
Please See Continuation Sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of any additional fees.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-28,39-42,64 and 65

**Remark on Protest**

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

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**BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING**

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-28, 39-42, 64 and 65, drawn to a composition substantially similar to OVT102, a kit containing the composition (and optionally the antibody of Group VII) and an article of manufacture comprising the said composition immobilized on a solid substrate.

Group II, claims 29-32 and 47-55, drawn to a nucleic acid encoding any of the compositions of claims 1-27 and cells carrying a vector containing said nucleic acid.

Group III, claim 33, drawn to a method for making any of the compositions of claims 1-27 in *E. coli*.

Group IV, claim(s) 34-38, drawn to a method for treating a subject having an unwanted virus by administering any of the compositions of claims 1-27.

Group V, claim(s) 43 and 44, drawn to a method for removing a virus from a bodily fluid.

Group VI, claim(s) 45 and 46, drawn to an antibody having affinity and specificity for an epitope comprising the N-terminus of a composition according to any of claims 1-25.

Group VII, claim(s) 56-63, drawn to a method for preventing or treating an animal epithelium for the presence of an unwanted virus comprising administering a probiotic antiviral medicament according to any of claims 47-55.

The inventions listed as Groups I-VII do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The "Special Technical Feature" of group I lacks unity of invention with US Patent No. 5843882, issued Dec. 1, 1998-see claim 2. Therefore, groups I-VII lack unity of invention because the special technical feature lacks novelty in the art.